



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22

Programme – Bachelor of Science in Medical Radiology & Imaging Technology

Course Name – Radiographic and Image Processing Techniques

Course Code - BMRIT204

(Semester II)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) Which of the following is the accelerator in the developer?

a) Sodium carbonate and sodium hydroxide	b) Potassium carbonate
c) Ammonium bromide	d) None of these
- (2) The function of the accelerators in the developer is

a) To stop the development	b) To decrease the rate of the development
c) To increase the rate of the development	d) None of these
- (3) Film is agitated during development

a) To increase the development	b) To maintain uniform development of film
c) To maintain the uniform temperature of solution	d) All
- (4) The reduction in the level of developing chemicals in tanks depends upon

a) Number of the films developed	b) The method of the development
c) Size and type of the film used	d) All
- (5) The action of the developer on unexposed silver bromide crystals of emulsion as

a) Dissolved	b) Oxidized
c) Washed away	d) Unaffected
- (6) Which is not true for fixer

a) Fixer solution is alkaline	b) Sodium / Ammonium thiosulphate acts as fixing agent
c) Sodium sulphite act as preservative	d) Chrome alum / potassium alum acts as hardener
- (7) Fixing agents used is

- a) Sulphuric acid
c) Sodium thiosulphite
- b) Sodium sulphite
d) Sodium chloride
- (8) Washing during processing of the film should be done under
a) Stagnant water
c) Using running water
- b) Using detergents
d) Using petrol
- (9) The pH of developing agent is
a) 9.5 - 10.7
c) 4.0 - 5.0
- b) 1.7 - 3.3
d) 7.4 - 8.3
- (10) Which is not true for developer
a) Developer solution is acidic
c) Potassium bromide acts as an antifogging agent
- b) Sodium sulphite acts as preservative
d) Mettol and hydroquinone acts as a reducing agent
- (11) Which is true for ideal processing (dark room)
a) 100 sq. Feet floor and 11 feet ceiling height
c) 50 sq. Feet floor and 20 feet ceiling height
- b) 150 sq. Feet floor and 15 feet ceiling height
d) 125 sq. Feet floor and 15 feet ceiling height
- (12) Wall of the dark room should be lined with lead sheet or some substance equivalent to
a) 1.5 mm thickness of lead or lead equivalent
c) 0.5 mm thickness of lead or lead equivalent
- b) 2.5 mm thickness of lead or lead equivalent
d) 4.0 mm thickness of lead or lead equivalent
- (13) Dark room should be located
a) Near the radiographic room
c) In the center of the radiographic room
- b) Away from the radiographic room
d) None of these
- (14) The material used to make the floor of the dark room should be
a) Resistance to chemicals and staining
c) Non slippery
- b) Non porous
d) All
- (15) The floor space in dark room should be
a) 100 square feet
c) 300 square feet
- b) 200 square feet
d) 400 square feet
- (16) The dry side in the dark room has
a) Loading bench
c) Replenishing solution
- b) Processing tank
d) Running water
- (17) The wet side of the dark room has
a) Loading bench
c) Replenishing solution
- b) Processing tank
d) Unused films
- (18) Most suitable location of pass box is near
a) Gate
c) Loading bench
- b) Processing solution
d) Window
- (19) Safe light should preferably be less than
a) 100 watts
c) 45 watts
- b) 200 watts
d) 15 watts
- (20) Statement A: Supercoat protects the emulsion layer from any external activity might to be damage their property. Statement: B: they cannot provide the suitable surface characteristic.

- a) Statement A is true
 b) Statement B is true
 c) Statement A is true and B is correct explanation of statement of A
 d) Both Statement are false
- (21) which of the following is the active material in intensifying screen
 a) Phosphor layer
 b) Subbing layer
 c) Both a & b
 d) Emulsion
- (22) Which of the following are the example of rare earth material except?
 a) Calcium tungstate
 b) lanthanum oxysulphide
 c) lanthanum oxybromide
 d) yttrium oxysulphide
- (23) Which of the following is known as the film holding device?
 a) screen
 b) cassette
 c) intensifying screen
 d) phosphor
- (24) Which of the following is considered as a key function of cassette?
 a) To hold intensifying screens and protect them from damage.
 b) To exclude all light from entering the cassette and fogging the film.
 c) To maintain a close and uniform contact between the film and screens.
 d) All of these
- (25) The back part of cassette is formed with higher atomic number element to reduce the effect of
 a) Primary beam
 b) secondary beam
 c) useful beam
 d) scatter beam
- (26) The use of carbon-fibre in the cassettes significantly
 a) Reduction in patient dose because of their longer viability
 b) lower beam attenuation,
 d) all of these
- (27) Statement A: In order to provide both a check on a cassette's lifespan and contribute to the efficiency of maintenance the cassette should be checked periodically. Statement B: Keep a record of cassette maintenance, e.g. when inspected, when cleaned, when tested for light leakage, etc.
 a) . Statement A is true
 b) Statement B is true
 c) Both statement are true
 d) Both statement are false
- (28) The place where a radiographic film can be processed is termed as
 a) dark rook
 b) processing rom
 c) special room
 d) both a &B
- (29) Film manufacturers generally recommend that the film store temperature be maintained betweenfor materials stored up to three months
 a) 18 and 21 °C
 b) 15 and 20 °C
 c) 11 and 21 °C
 d) 10 and 15 °C
- (30) If 15 watt bulb used in dark room then how much distance from safe light to film is required for normal processing activity in the dark room?
 a) 1 meter
 b) 2 meter
 c) 1.2 meter
 d) 2.1 meter
- (31) Processing chemical is a essential element of
 a) DRY SIDE
 b) Wet side
 c) PASS BOX NONE OF THESE
 d) 2

- (32) The thickness of the sheet of radiographic film is about
- | | |
|------------|------------|
| a) 0.25 mm | b) 0.15 mm |
| c) 0.5 mm | d) 1 mm |
- (33) The active ingredient of radiographic emulsion consist of
- | | |
|---------------------|------------------|
| a) Silver bromide | b) Silver iodide |
| c) Silver tungstate | d) Both a & b |
- (34) The panoramic films are
- | | |
|-------------------------|---------------------------|
| a) Single emulsion film | b) . Double emulsion film |
| c) Both 1&2 | d) Cine film |
- (35) Which of the following film is used to copy multiple number of films from single chemically processed film by UV Light?
- | | |
|---------------------|---------------------|
| a) Mammography film | b) Duplicating film |
| c) Dental film | d) Substratum film |
- (36) Any material that emits light to some external stimulation is called
- | | |
|----------------|----------------|
| a) Luminescent | b) Phosphor |
| c) PMT | d) Fluorescent |
- (37) Which of the following element work as anti fogging agent in developing solution?
- | | |
|----------------------|---------------------|
| a) Potassium bromide | b) Potassium iodide |
| c) Silver bromide | d) Both a & b |
- (38) Sodium sulfite is used in developing solution as
- | | |
|----------------|-----------------|
| a) Activator | b) Preservative |
| c) Re-strainer | d) All of these |
- (39) A radiographic film can be visualized in normal illumination after
- | | |
|---------------|-----------|
| a) Developing | b) Fixing |
| c) Rinxing | d) Wasing |
- (40) Which of the following element is work as a fixing agent ?
- | | |
|------------------------|--------------------------|
| a) Sodium thyosulphate | b) Ammonium thiosulphate |
| c) Sodium sulphate | d) Both a & b |
- (41) Which of the following acid used in fixer ?
- | | |
|----------------------|--------------------|
| a) Acetic acid | b) Sulpheuric acid |
| c) Ammonium chloride | d) Both a & b |
- (42) Statement A: Automatic processor reduce the processing time which leads to increase the working capacity of the radiology department. Statement B: It improve the image quality by accurate temperature and concentration of the processing chemicals.
- | | |
|---|---|
| a) Statement A is true | b) Statement B is true |
| c) Statement A is true and B is correct explanation of statement of A | d) Statement A is true But statement B do not explain correctly of statement A. |
- (43) The essential component of CR cassette which play an important role in image acquisition is
- | | |
|-----------|-------------|
| a) screen | b) PSP |
| c) Grid | d) Emulsion |
- (44) The dark room should be located
- | | |
|-------------------------------|-------------------------------|
| a) Near the processing room . | b) Near the radiographic room |
|-------------------------------|-------------------------------|

- c) Far the radiographic room
d) None of these
- (45) Digital radiography use
a) Cassette
b) Detector
c) Intensifying screen
d) All of these
- (46) Work station in the radiology department is
a) DICOM
b) PACS
c) WINDOW
d) JAWA
- (47) Which of the following advancement is used to save the lot of time during communication of patient information or transferring the patient's data from one place to another place?
a) DICOM
b) PACS
c) WINDOW
d) JAWA
- (48) The processing cycle of radiographic film consist of
a) Developing -fixing-washing-dry
b) Developing-wasing-fixing-dry
c) Developing-Rinxing-Fixing-Dry
d) Developin -Fixing-Rinxing-Dry
- (49) Buffer is a chemical component which is used to maintain theof the solution
a) PH
b) CONCENTRATION
c) Amount
d) VISCOCITY
- (50) Which of the following element used to overcome the oxidation of processing chemicals?
a) Potassium sulphide
b) Potassium sulphite
c) Potassium bromide
d) Calcium bromide
- (51) Which of the following factors affect the developing solution?
a) Constitution of solution
b) Temperature
c) Time
d) All of these
- (52) The processing chemical can be mixed in a tank with which type of sterer?
a) plastic
b) metalic
c) wooden
d) both A&C
- (53) When you mix the processing chemicals they can produce
a) Fume
b) Light
c) Water
d) All of these
- (54) Some artifact may be appear in DR imaging system due to
a) Acquisition
b) Post-Processing
c) Display
d) All of these
- (55) Which of the following element used as activator in phosphor material
a) Europium
b) Fluorohalide
c) Barium
d) Gelatin
- (56) Digital radiography leads to
a) Reduce the scan time
b) Increase the work capacity
c) Inhance image quality
d) all of these
- (57) Statement A: Aluminium chloride and aluminium sulphate are commonly used hardening agents in fixing solutions. Statement B: They work rapidly and most effectively within the rather narrow pH range of 4.1-4.4.
a) Statement A is true
b) Statement B is true

c) Statement A is true and B is correct explanation of statement of A

d) Statement A is true But statement B do not explain correctly of statement A

(58) Buffer Precise control of pH of fixer is important in order to

a) Prevent sulphurization

b) Ensure neutralization of developer

c) Maintain optimum hardener activity

d) All of these

(59) safe lighting is intended to provide general illumination of the darkroom

a) INDIRECT

b) DIRECT

c) NEUTRAL

d) RADIOGRAPHY

(60) The radiographic film should be kept in

a) Radiography room

b) processing rom

c) Store room

d) Medical record room